

REMARKS

The Office Action of May 22, 2009 rejected Claims 8, 10, 19 and 25 as being obvious over a combination of the Tsai et al. US Patent No. 6,011,354 in view of the previously cited Wedding US Patent No. 7,157,854.

Additionally, the Office Action contended that the subject matter of Claims 11-18 were withdrawn from consideration due to the earlier restriction requirement. Applicant is still reserving the right to file a divisional application on that subject matter.

Dependent Claim 25 has been further amended to remove any double patenting issue.

The present invention is directed to a plasma flat panel display screen of the type commercially sold by Panasonic as plasma display television sets, see new Claim 26.

Our inventors recognized the impact on luminous efficiency due to the effects of gas composition, pressure and discharge voltages that can vary for each type of phosphor provided to produce a pixel emission of color across the rib grooves. Additionally, the lifetime of a plasma display panel is heavily dependent upon the characteristics of a particular phosphorus layer. This can be recognized in old plasma display panels where there is a discoloration problem that can be seen in the reproduction of human faces with a green hue. Thus, the present invention provides a longer life and a more economical plasma display television set by changing the composition and pressure of each of the discharged gasses for the particular type of phosphorus layer by providing two separate sealed internal spaces for discharge gasses for different phosphorus layers.

As shown in our Figure 2, we can have a first space to address red and green phosphorus layers and a second space to address blue phosphorus layers that can be effectively sealed off from each other. As can be appreciated, individual pixels that can formulate the desired images

can be realized by the appropriate addressing of pairs of display electrodes mounted across the display space to execute a discharge for each pixel position.

The present invention is now further defined in the amended claims 8 and 19 by the relationship of the respective auxiliary barrier ribs connecting with the grooves to provide a division between the respective first and second internal spaces containing separate phosphorus layers. Support for this amendment in our claims can be found in our present specification at Page 14, line 22 as follows:

(Example 1) In the example shown in FIG. 2 and FIG. 3, the grooves 26 in which a red phosphor layer 25R and a green phosphor layer 25G are formed are closed at one end (the lower part in FIG. 2) by the auxiliary barrier ribs 27, and the grooves 26 in which blue phosphor layers 25B are formed are closed at the other end (the upper part in FIG. 2) by the auxiliary barrier ribs 27. With this construction, the phosphor layers 25R and the phosphor layers 25G are included in the first space A and the phosphor layers 25B are included in the second space B.

Applicants respectfully request that the principle reference, Tsai et al. could only have been cited in hindsight from our present application.

The KSR Court noted that obviousness cannot be proven merely by showing that the elements of a claimed device were known in the prior art; it must be shown that those of ordinary skill in the art would have had some “apparent reason to combine the known elements in the fashion claimed.”

In the same way, when the prior art teaches away from the claimed solution as presented here, obviousness cannot be proven merely by showing that a known composition could have been modified by routine experimentation or solely on the expectation of success; it must be shown that those of ordinary skill in the art would have had some apparent reason to modify the known composition in a way that would result in the claimed composition.

Ex parte Whalen et al., Appeal 2007-4423, slip op. at 16 (B.P.A.I. July 23, 2008) (citing *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007)).

The Tsai et al. reference is not even directed to a plasma display panel, let alone a plasma display television set.

The Tsai et al. reference is directed to a liquid crystal display panel and more particularly to a flat panel lamp that is constructed of a plurality of serpentine shaped channels to permit a blending of red, green, or blue to provide a bright white backlighting of the LCD panel. As noted in Col. 3, only three pairs of electrodes are utilized for providing electric power at the ends of each of the respective serpentine channels to thereby reproduce the three primary color lights of red, green and blue to provide the bright white discharge. There is certainly no teaching nor suggestion of providing a plasma display apparatus with a pair of substrates positioned opposite each other with a plurality of pairs of display electrodes activated to create animated images on pixels necessary for a plasma display television.

The Tsai et al. reference simply teaches power electrodes within the interior channels of conventional fluorescent tubes to collectively activate three separate colors to provide a bright backlight with the actual display images only being created by a LCD laminated structure that will overlay this lamp configuration.

Basically, Tsai et al. teaches a particular type of flat panel lamp and clearly defines the relied upon Figure 2 as a lamp 40, see Col. 4, lines 35-57. Accordingly, applicants submit that the principle Tsai et al. reference teaches simply a lamp with a conventional fluorescent electrodes within the interior and significantly spaced apart to provide a common discharge across each entire serpentine tube. There is no rib structure taught nor suggested in Figure 2 of Tsai et al. that would be considered equivalent, by a person of ordinary skill in this field, to the claimed grooves of our image display device. In this regard, we define our grooves as

constituting a first space closed by auxiliary barrier ribs, not by the end electrodes 66 that are spaced from the opposing end electrodes 76, see the teaching on Col. 5, lines 6-9.

The Wedding reference is cited purportedly to teach a modification of the Tsai et al. disclosure so that the gas pressure and composition of each of the tubes can be different, see Page 3, penumbral paragraph of the Office Action, citing Col. lines 56-59 of Wedding. The Wedding reference, however, simply teaches a self-enclosed preferably flat rectangular capillary tube that has a fused glass seal at each end.

In fact, the Wedding reference specifically teaches away from the use of conventional panel barrier ribs between glass panel substrates. As noted on Col. 7, lines 44-49 as follows:

Glass sandwich dual substrate displays require a precision network of barrier ribs between the glass panel sheets to laterally confine the long positive column discharge path. Barrier defects can adversely affect display panel manufacturing yield, display operation, and display appearance.

Accordingly, a person of ordinary skill in this field would not only consider a fluorescent panel back lighting structure of Tsai et al. as not relevant to a plasma display television invention, but would further be taught away from considering conventional work of barrier ribs located between the respective substrates to form the individual interior spaces.

“A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.” *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994); *see KSR*, 127 S. Ct. at 1739-40 (explaining that when the prior art teaches away from a combination, that combination is more likely to be nonobvious). Additionally, a reference may teach away from a use when that use would render the result inoperable. *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1354 (Fed. Cir. 2001).

In re Icon Health and Fitness, Inc. 2007 U.S. App. Lexis 18244,
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Wedding only suggests self-contained elongated tubes that were of particular value for single substrate structures and flexible or bendable displays. Persons of ordinary skill in the field would be taught that a plasma display device as set forth in the Title of the patent, Tubular PDT and as defined in the Summary of the Invention in Column 4, Lines 49-51 is as follows:

As used herein elongated tube is intended to include capillary, filament, filamentary, illuminator, hollow rods, or other such terms.

As can be determined from the Figures (see Figure 1B), rectangular cross sectional tubes formed from an optical grade clear fused quartz, are contemplated. See Column 6, Lines 1-5. The individual capillary tubes are fused sealed with a plug 101A as shown in Figure 1A. As also disclosed in Figure 1A, the phosphor layers are placed on the outside of the tubes and transmission of the UV light through the quartz tube is utilized to excite each of the phosphor channels. See Column 6, Line 60 through Column 7, Line 9.

Thus, the issues of optimizing with different gas pressures a luminance value of a specific phosphor within a discharge space is not a teaching of this reference.

Wedding teaches away from barrier rib production methods of plasma display panels. Our current claims use the following terms that are not suggested nor taught in the references of record:

- (a) barrier ribs in strip pattern form grooves.
(Note, grooves are shown as formed on a substrate in Figure 2 and Webster's New College Dictionary defines "a long, narrow furrow or channel.")
- (b) closed at one end by an auxiliary barrier rib
- (c) grooves constituting the first space connect with one another
(a plurality of grooves connected through open ends.)
- (d) grooves constituting the second space connect with one another

(e) discharge gases in first and second spaces differ in at least one of composition and pressure

Accordingly, applicant respectfully submits that not only is there a lack of a teaching reference other than the disclosure of our present application for combining these two references, but that further any hypothetical combination of these two references still would not address the specific claimed elements set forth in our invention.

If the Examiner believes a telephone interview will assist in the prosecution of this invention, the undersigned attorney can be contacted at the listed phone number.

It is respectfully submitted that the case is now in condition for allowance and an early notification of the same is requested.

Very truly yours,

SNELL & WILMER L.L.P.


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